

### **REMARKS**

Applicants have amended claim 6 and added new claims 34-36. Claims 12-33 are withdrawn due to restriction. Upon entry of this amendment, claims 1-11 and 34-36 will be pending for examination.

As a preliminary matter, Applicants would like to inform the Examiner that Applicants filed a Petition From Requirement For Restriction on January 22, 2004. In summary, in that petition Applicants submitted that none of the original claims were directed to species, as asserted by the Examiner. To the contrary, the original claims were directed to a combination / subcombination. Consequently, the Examiner's species-based restriction was erroneous, and the Examiner should have applied two-way distinctness analysis for a combination-subcombination restriction, as is required, to determine whether restriction is proper. If the petition is granted, Applicants withdraw their election of claims 1-11 and 34-36, and request an examination on the merits of original claims 1-36.

In the present Office Action, the Examiner made final the restriction and merely stated that "[a]s to the two-way distinctness argument, the Examiner gave species, not combination-subcombination restriction." This response is circular in that it does not address Applicants' argument that the species-based restriction was itself improper as none of the original claims were directed to different species. Applicants request clarification on this point. In the event the Examiner continues to maintain the restriction, Applicants request clarification with respect to which claimed "species" the Examiner is referring and, in particular, how the claims could possibly be construed to read on those species.

In addition, the Examiner requested the Applicants match claim limitations to reference numerals in the disclosure of the present application. Applicants respectfully remind the Examiner that the claims are not limited to the exemplary embodiments described in the specification. Nevertheless, in order to expedite prosecution, Applicants have attempted to clarify certain claim terms for the benefit of the Examiner in the remarks below. Applicants invite the Examiner to telephone the below-signed attorney to discuss this application if he has any questions regarding the claim terms or the application generally.

**Claim Rejection Under 35 U.S.C. § 112**

In the Office Action, the Examiner rejected claims 1-11 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regards as their invention. In particular, the Examiner stated that the term “a system” within the preamble of claim 1 is inconsistent with the term “printed circuit board” as used in the dependent claim 9. The Examiner asserted that the use of these terms renders the scope of the claim 1 vague and indefinite because “it is unclear if the intent is to claim either the subcombination of the ‘a system’ or the combination of ‘a system’ and ‘a printed circuit board.’”

Applicants traverse the rejection of 1-11 under 35 U.S.C. 112, and submit that these claims particularly point out and distinctly claim the subject matter, as required by 35 U.S.C. 112, second paragraph. Claim 1 is directed to a system, and recites certain elements. In particular, claim 1 recites a housing configured to receive a removable component; an assembly coupled with the housing, the assembly including a pin; and a rotatable drive shaft coupled with the removable component to engage the assembly, wherein the drive shaft includes a first helical groove to receive the pin and guide the pin along the shaft. Dependent claim 9 limits the term removable component of claim 1 to be a printed circuit board. Consequently, the removable component, which may be a printed circuit board, is one element of the overall system.

An example of such a system is shown in FIG.S 1-4 of the present application. FIG. 4, for example, illustrates a housing 110 of a network router that receives a printed circuit board 60 as a removable component. Receptacle assembly 18A is coupled to housing 110 and includes pin 48B. Rotatable drive shaft 14 is coupled to the printed circuit board 60, and has a first helical groove 50 that receives pin 48B. When the operator rotates handle 16 clockwise, drive shaft 14 rotates, causing pin 48B to follow first helical groove 26. As this occurs, drive shaft 14 facilitates the entry of pin 48B into first helical groove entry 50, and printed circuit board 60 is inserted into housing 110. A counter-clockwise rotation may be used to easily remove printed circuit board 60 from housing 110.

FIG. 1 may be viewed as providing a close-up perspective of the system shown in FIG. 4. In particular, FIG. 1 illustrates an example helical insertion and extraction device that assists in

the insertion and extraction of printed circuit boards or other components from a device or subsystem such as a network router.

Applicants request withdrawal of the rejection of 1-11 under 35 U.S.C. 112. Claims 1-11 particularly point out and distinctly claim the subject matter, as required by 35 U.S.C. 112, second paragraph.

### **Claim Rejection Under 35 U.S.C. § 102**

In the Office Action, the Examiner rejected claims 1, 2, 7 and 8 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 243,035 to G. Geer (herein, "Geer"). Applicants respectfully traverse the rejection. Geer fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. 102(b), and provides no teaching that would have suggested the desirability of modification to include such features.

With respect to claim 1, for example, Geer fails to teach or suggest a housing configured to receive a removable component; an assembly coupled with the housing, the assembly including a pin; and a rotatable drive shaft coupled with the removable component to engage the assembly.

To the contrary, Geer describes an apple parer for coring and slicing apples. With regard to these elements of claim 1, the Examiner assert Geer anticipates the elements of claim 1 by describing an apple parer having a u-shaped frame *A* and a spirally-grooved shaft *B* that may be cranked longitudinally to core and slice an apple. However, contrary to the Examiner's assertion, Geer fails to describe a rotatable drive shaft coupled with a removable component, as recited in Applicants' claim 1. In fact, Geer does not even describe a removable component. Moreover, to the extent the u-shaped frame *A* of the apple parer of Geer can even reasonably be construed as a "housing," Geer does not describe any component removable from the housing by use of a rotatable drive shaft. For example, even if the shaft of Geer is fully rotated in both directions, not components is inserted into or removed from the "housing" of Geer. The shaft itself always remains within the u-shaped frame.

Consequently, Geer fails to describe a handle coupled with the removable component, wherein rotation of the handle drives the shaft relative to the pin to move the removable component relative to the housing, as required by Applicants' claim 2.

Moreover, Geer fails to teach or suggest a detent forming a terminus of the first helical groove and configured to receive the pin, as recited by Applicants' claim 7. With respect to claim 7, the Examiner merely refers to the "beginning groove" of the spirally-grooved shaft *B* of the Geer apple parer. However, the beginning of the spirally-grooved shaft does not act as a terminus for the pin. To the contrary, the term "terminus" is defined as "the final point; the end."<sup>1</sup> This definition is consistent with the disclosure in the present application, which states that as drive shaft is rotated clockwise, the pin traverses the helical grooves and ultimately reaches a terminating detent. As pin reaches the end of first helical groove, a compression spring expands and forces the pin into the detent to terminate its traversal within the helical groove, thus preventing further rotation.

Geer fails to describe a helical grove having a detent at all, let alone a detent forming a terminus. In fact, in direct contrast, Geer requires a "stop" upon the frame itself.<sup>2</sup> For at least these reasons, Geer fails to teach or suggest a compression spring arranged so that as the pin travels along a portion of the first helical groove the compression spring is compressed and causes the pin to enter the first detent, as required by Applicants' claim 8.

Geer fails to disclose each and every limitation set forth in claims 1, 2, 7 and 8. For at least these reasons, the Examiner has failed to establish a prima facie case for anticipation of Applicants' claims 1, 2, 7 and 8 under 35 U.S.C. 102(b). For at least these reasons, withdrawal of this rejection is requested.

#### **Claim Rejection Under 35 U.S.C. § 103**

In the Office Action, the Examiner rejected claims 3-6 under 35 U.S.C. 103(a) as being unpatentable over Geer in view of U.S. Pat. No. 4,615,274 to Hoehn. In addition, the Examiner rejected claim 9 under 35 U.S.C. 103(a) as being unpatentable over Geer in view of U.S. Pat. No. 4,939,908 Ewing et al. (herein, "Ewing"). The Examiner rejected claims 10-11 under 35 U.S.C. 103(a) as being unpatentable over Geer in view of U.S. Pat. No. 6,354,119 to Molzer.

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<sup>1</sup> *The American Heritage® Dictionary of the English Language, Fourth Edition.*

<sup>2</sup> *Page 2, ll. 110-113.*

Applicants respectfully traverse these rejections. The applied references fail to disclose or suggest the inventions defined by Applicants' claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

*Claims 3-6*

With respect to claims 3-6, the Examiner proposes to modify the apple parer of Geer with a chain conveyor for robotic production operations described by Hoehn. Hoehn, however, lacks any teaching or suggestion of any of the elements recited by claims 3-6. With respect to claim 3, for example, Hoehn lacks any teaching of a first helical groove entry having a width greater than a width of the first helical groove, wherein at least a portion of the first helical groove entry is defined by a first inclined entry guide. With respect to claims 4 and 5, Hoehn lacks any teaching or suggestion of a first groove point disposed at a first end of the first inclined entry guide, and a transition portion disposed between the first inclined entry guide and the first helical groove.

In rejecting claims 3-6, the Examiner summarily references FIG. 4 that illustrates a helical drive shaft. FIG. 4, however, appears to show a helical groove with a constant width and, therefore, does not show helical groove entry having a width greater than a width of the first helical groove, as required by claim 3. Moreover, FIG. 4 does not show an inclined entry guide at all, let alone an inclined entry guide having a groove point disposed at the end of the first inclined entry guide, as required by claims 4 and 5. In contrast, FIG. 4 of Hoehn shows the groove simply terminating in a conventional fashion.

For clarification purposes, Applicants refer the Examiner to FIG. 2B of the present application, which clearly illustrates the widened structure of first helical groove entry which transforms into the first helical groove. As illustrated, first and second helical groove points 34, 56 form the upper and lower (as illustrated) boundaries of entry 50. Groove points 34, 56 taper towards each other along first and second inclined entry guides 52, 54 which eventually channel into first helical groove 26.

With respect to claim 6, as amended, Hoehn fails to describe a drive shaft having two grooves at all, let alone a second helical groove having a second helical groove entry including a second groove point, wherein at least a portion of the second helical groove entry is defined by a second inclined entry guide.

Moreover, the Examiner's assertion that it would be obvious to one of ordinary skill in the art to modify the apple parer of Geer with a chain conveyor for robotic production operations described by Hoehn is unreasonable. One skilled in the art would not look to a conveyor for transporting cars to modify an apple parer. Moreover, the Examiner has not pointed to any motivation in the art for such a modification. The Examiner asserts that one of ordinary skill in the art would modify the apple parer of Geer "for the purpose of efficiently and economically indexing products." How does this motivation teach or suggest modification of an apple parer where no products are involved, let alone indexed?

#### *Claim 9*

With respect to claim 9, neither Geer nor Ewing teach a rotatable drive shaft coupled with a printed circuit board that is fully inserted and extracted through rotation of the drive shaft that engages an assembly coupled to a housing. As described above, Geer is directed to an apple parer and does not describe a removable component whatsoever. Ewing describes an apparatus for adjustably controlling the size of an ice bank, and shows a printed circuit board internally mounted within a housing using a screw. Consequently, Ewing does nothing to overcome the deficiencies with of Geer, and does not teach or suggest a rotatable drive shaft coupled to a removable printed circuit board that is fully inserted and extracted through rotation of the drive shaft that engages an assembly coupled to a housing.

In rejecting claim 9, the Examiner asserted that it would be obvious to one of ordinary skill in the art to modify the apple parer of Geer "by inserting and extracting a printed circuit board through rotation of the drive shaft, as taught by Ewing, for the purpose of electrically communicating with other electronic devices." Again, the assertion is generally unreasonable, and is not based upon substantial evidence, which is required.<sup>3</sup>

#### *Claims 10-11*

With respect to claim 10, neither Geer nor Molzer teach or suggest a locking device configured to prevent rotation of the handle relative to the removable device when the locking

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<sup>3</sup> *In re Lee*, 61 USPQ2d 1430, (CAFC 2002).

device is engaged. With respect to claim 11, neither Geer nor Molzer teach or suggest that the locking device further comprise a threaded member disposed within the handle to prevent rotation of the handle relative to the removable device. As described above, Geer is directed to an apple parer and does not describe a removable component whatsoever. Molzer describes a door handle and a lock that may be used, for example, with a front door of a house. Consequently, Molzer does nothing to overcome the deficiencies with of Geer with respect to a removable device.

In rejecting claim 8, the Examiner asserted that it would be obvious to one of ordinary skill in the art to modify the apple parer with a door handle and lock described by Molzer. Again, not would such a modification fail to achieve Applicants invention, but the assertion is generally unreasonable and not based upon substantial evidence.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicants' claims 3-6 and 9-11 under 35 U.S.C. 103(a). Withdrawal of these rejections is requested.

**New Claims:**

Applicants have added claims 34-36 to the pending application. The applied references fail to disclose or suggest the inventions defined by Applicants' new claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed inventions. No new matter has been added by the new claims.

Appl. No. 09/940,261  
Amd dated February 25, 2004  
Reply to Office Action of November 26, 2003

### CONCLUSION

All claims in this application are in condition for allowance. Applicants respectfully request reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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